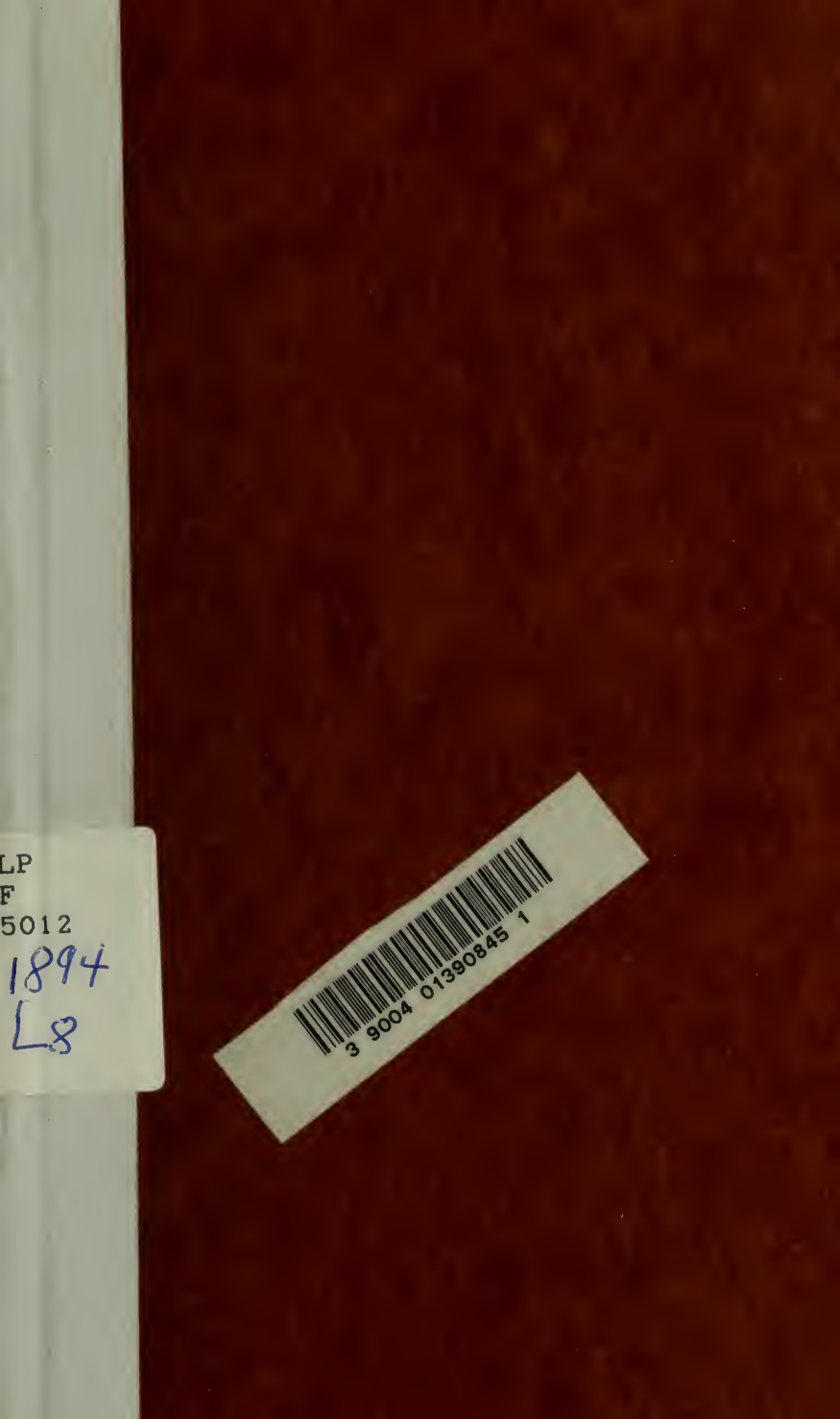
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CANADIAN AGRICULTURE.

A REPORT OF A VISIT TO THE DOMINION IN 1893,

BY

PROFESSOR JAMES LONG

Published by Authority of the Government of Canada (Department of the Interior).

MARCH, 1894.

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PREFACE.

Professor James Long, the well-known agricultural expert and writer, visited Canada, but not at the invitation of the Dominion Government, during the summer and autumn of 1893. On his return, the High Commissioner asked him to prepare a Report of his impressions, based upon the observations he had made during his travels. It is now presented to the public, and the High Commissioner feels that it will be interesting and valuable, not only to British agriculturists, but to those engaged in farming in the Dominion.

It is generally known that a number of tenant farmers from the different parts of the United Kingdom were invited to visit Canada last autumn, with a view to report upon the agricultural resources of the country, and the advantages it offers for the settlement of farmers and farm labourers, and the other classes for which there is a demand. The following are the names of the gentlemen in question:—

Mr. A. J. Davies, Upper Hollings, Pensax, Tenbury, Worcestershire; Mr. W. H. Dempster, Millbrook Lodge, Clarbeston Road, South Wales; Mr. Alexander Fraser, Balloch, Culloden, Inverness, Scotland; Mr. R. H. Faulks, Langham, Oakham, Rutland; Mr. J. T. Franklin, Handley, near Towcester, Northamptonshire; Mr. J. J. Guiry, Peppardstown, Fethard, Clonmel, Ireland; Mr. Tom Pitt, Oburnford, Cullompton, Devon; Mr. John Roberts, Plas Heaton Farm, Trefnant, North Wales; Mr. Reuben Shelton, Grange Farm, Ruddington, Nottinghamshire; Mr. Joseph Smith, 2, Mowbray Terrace, Sowerby, Thirsk, Yorkshire; Mr. John Steven, Purroch Farm, Hurlford, Ayrshire, Scotland; Mr. Booth Waddington, Bolehill Farm, Wingerworth, Chesterfield; and Mr. William Weeks, Cleverton Farm, Chippenham, Wiltshire.

In addition, two other farmers—Mr. John Cook, of Birch Hill, Neen Sollars, Cleobury Mortimer, Shropshire; and Mr. C. E. Wright, of Brinkhill, near Spilsby, Lincolnshire—visited the Dominion, under their own auspices, during 1893; and they have also been good enough to prepare Reports of their impressions.

The Reports, if published together, would make a bulky volume. They have therefore been divided into the following parts:—

Part 1—The Reports of Messrs. Shelton, Waddington, Cook, and Smith.
Part 2—The Reports of Messrs. Franklin, Faulks, and Wright.
Part 3—The Reports of Messrs. Weeks, Pitt, and Davies.
Part 4—The Reports of Messrs. Roberts and Dempster.
Part 5—The Reports of Messrs. Steven and Fraser.
Part 6—The Report of Mr. Guiry.

Part 1 will be circulated in the following counties:—Northumberland, Cumberland, Durham, Westmoreland, York, Lancashire, Shropshire, Cheshire, Staffordshire, Derby, and Nottingham.

Part 2, in Lincoln, Rutland, Leicester, Northampton, Huntingdon, Cambridge, Norfolk, Suffolk, Essex, Hertford, Bedford, Bucks, Oxford, Berks, Middlesex, Surrey, Kent, and Sussex.

Part 3, in Warwick, Worcester, Hereford, Gloucester, Wiltshire, Hampshire, Dorset, Somerset, Devon, and Cornwall.

Part 4, in Wales; *Part* 5, in Scotland; and *Part* 6, in Ireland.

Professor Robert Wallace, who holds the Chair of Agriculture and Rural Economy in the University of Edinburgh, and is the author of "The Farm Live Stock of Great Britain," "Indian Agriculture,"

and "The Rural Economy and Agriculture of Australia and New Zealand," &c., also paid a visit to Canada in 1893, at the invitation of the Canadian Government, and has prepared a Report upon the agricultural resources of the country, which is now available for distribution.

From whom Pamphlets obtainable.

Any or all of these pamphlets, as well as other illustrated pamphlets issued by the Government, may be obtained, post free, by persons desiring to peruse them, on application to the Hon. Sir Charles Tupper, Bart., G.C.M.G., C.B., High Commissioner for Canada, 17, Victoria Street, London, S.W.; to Mr. J. G. Colmer, C.M.G., Secretary, at the same address; or to any of the agents of the Canadian Government in the United Kingdom, whose names and addresses are as follows:—Mr. John Dyke, 15, Water Street, Liverpool; Mr. Thomas Grahame, 40, St. Enoch Square, Glasgow; Mr. E. J. Wood, 79, Hagley Road, Birmingham; Mr. P. Fleming, 44, High Street, Dundee; Mr. W. G. Stuart, Nethy Bridge, Inverness; and Mr. G. Leary, William Street, Kilkenny. Copies may also be obtained from the steamship agents, who are to be found in every village.

It may be desirable to refer briefly to the land regulations in force in the different provinces. In Manitoba and the North-West, free grants of 160 acres are offered to eligible settlers—*i.e.*, males over 18 years of age, and females who are the heads of families; further quantities may be purchased either from the Government, or the various land and railway companies, at prices ranging from 10s. an acre. In Prince Edward Island, Government land may be purchased at from 4s. 2d. an acre. In Nova Scotia the price of Crown lands is £8 per 100 acres. New Brunswick gives free grants of 100 acres on condition of certain improvements, and on payment of £4 in cash, or work on public works to the extent of £2 per annum for three years. Residence and certain improvements are also required. In Ontario, free grants of from 100 to 200 acres are made, with the option of purchasing more if required, at a low rate. The grants in Ontario are subject to certain conditions. In the Rainy River district, to the West of Lake Superior, free grants are also given from 120 to 160 acres, with the privilege of purchasing an additional quantity. In British Columbia, land can be obtained, both from the Provincial and Dominion Governments, at from 4s. 2d. per acre, on certain conditions of settlement and improvements. For land free of conditions 20s. per acre is charged by the Dominion Government; but no sale, except in special cases, is to exceed 640 acres to one person. Improved farms may be purchased in all the provinces at reasonable rates. They are suitable for persons with some means who desire more of the social surroundings than can be found in those parts of the country in which Government lands are still available for occupation and settlement. Most of the pamphlets issued by the Government explain the land regulations at length, and also contain much general information about the resources and trade of the country.

THE REPORT OF PROFESSOR LONG.

British Conditions.

THERE are probably very few persons engaged in agricultural pursuits who, having read one of the many reports which have appeared from time to time with regard to the capacity of Canada in the production of grain, have not been animated by a desire to explore the Great West for themselves, and to see with their own eyes the actual state of affairs. It is a practical if not very remarkable fact that, wherever agriculture is concerned, the intending occupier of the soil prefers to examine it for himself, and to personally estimate its value and capabilities. The British tenant farmer, in making a change from one part of the country to another, exercises the greatest possible precaution in this respect before he puts his name to paper; nor is he content with personal inspection alone. He enters upon an inquiry, however informal, with a view of ascertaining to the fullest extent the nature and depth of the soil, its condition at different seasons of the year, the crops which it has grown, and the quality of the grain which it produces. Having satisfied himself upon these points, he makes a careful inspection of the water supply, the buildings, and the fences, each of which, if defective, may entail considerable expense, not merely in repair, but in loss or damage to stock and crops. The British farmer, too, is compelled to consider other points which do not affect the farmer of the Dominion, for there are such things as leases and agreements in the Old Country, with their restrictive covenants and prohibitive clauses, in which the tenant is forbidden to sell certain portions of his produce, to grow cereals twice in succession, or, it may be, to mow grass land just when he chooses. He has to reckon with the tax collector, who makes heavy claims upon him for highway, sanitary, police, education, and poor rates, for the income tax and the inhabited house duty; and, lastly, he may be subject to a heavy demand for tithe, which is sometimes higher than the out-and-out cost of good land in the West of Canada. It will be admitted at the outset that the Canadian farmer is a stranger to any of these claims. He scarcely knows of the existence of tax collectors in any form. Indeed, we met with farmers upon whom a demand had never been made for payment of any kind of tax whatever. He has no tithe to pay, no rent, and such documents as leases and agreements, to say nothing of the almost feudal conditions of which they are largely composed, are to him an unknown quantity. In a word, the position of the Canadian farmer is one of absolute independence—an independence which is as strange to the farmers of England as are the conditions under which they farm strange to the farmers of all our colonies. It is a peculiar fact, but there are unquestionably thousands of farmers in the Old Country who relish, or profess to relish (which is perhaps not quite the same thing), the wretched system

which makes them subject to the caprice of their landlords, and which binds them to conditions which ought never to exist.

Old Country—Advantages.

Let us see what are the respective advantages and disadvantages attached to Old Country and Canadian farming. The English farmer cultivates the soil in the land of his birth—a land with an ancient, some people say glorious, history—a history, however, which, like that of its European neighbours, has been tarnished by unrighteous war and bloodshed, of which we have no reason to feel proud. He is among his friends. The comforts of life are within his reach, nay, at his very door. Labour is cheap and plentiful. His life is a comparatively easy one, and, if he has no sentimental views upon liberty and independence, he may pass his days in comparative peace and quietness, although he may be unable to acquire provision for his old age, or sufficient means to enable him to give his family a good start in life. It appears, then, that the chief compensating advantages which the English farmer possesses are sentimental: nevertheless, there is something substantial. In the case of a man who has reached, or who is approaching, middle age, the abrupt termination of home and family ties is in many cases unendurable; but the young men, the farmers of the future, rapidly overcome every difficulty of this kind, identifying themselves with the country of their adoption, and learning to despise the servile conditions which obtain in the land of their birth, although they never forget or cease to respect it.

Canadian Opportunities.

The life of the Canadian farmer is a great contrast to that to which we have just referred. It is associated with labour and liberty, hardship and independence. The payment of rent and taxes, and the restrictions imposed by the landlord, are replaced by absolute ownership of the soil—an ownership which is as well defined as that of a king in his castle—a sovereignty which is indisputable. In exchange for a life in the Old Land, the farmer fixes his abode among men who, like himself, have struck out a bold line, and who, although under difficulties, are only too anxious to promote happiness, good fellowship, and comfort. In England, the climax of enjoyment of many of our farmers is a day at market, dining at the market ordinary, with the merry conversation in the smoking room during the succeeding afternoon. The farmers of the West have few such opportunities, but they are not so far apart as to prevent similar social enjoyment at each other's homes, and gatherings in the towns and villages on rarer occasions. To a large extent, the content and happiness of man is centred in his achievement of success in the business he follows. If that is prospering, he asks for little more; and it is largely in the fact that the Canadian farmer is striving to build up, not only a successful business, but a property, that he remains satisfied with his lot.

Some Questions Answered.

Are there comforts in the log cabin on the Western prairie, or within its reach? So far as my own observation is concerned, they are unlimited as regards food and clothing, while they are limited as regards the size and convenience of the home-

stead, the distance from a railway, and oftentimes from neighbours and towns. Is labour plentiful and cheap? We shall show, in the remarks which will follow under this head, that it is fairly abundant, and infinitely cheaper than the public have been led to believe. Is the life a severe one? It is one of toil during the seeding and harvesting seasons, for the most is made of daylight; but we are bound to believe that this time, which is one of the greatest hope—a season, indeed, of hope and realisation—is accepted as the happiest of the year. The hardship follows with the severity of winter, which is long and cold, and which it would be folly to underestimate. The settler should make up his mind upon this point, and equip both himself, his house, and buildings accordingly. In the West itself we received statements from settlers, who ventured to give different opinions. What was enjoyable in the one case was considered most severe in another; but it largely depends—so it would appear from these statements—upon the constitution, the training, and the habits of the individual. Canadians born know no other climate. They are inured to the climate of their country, and accept it as a natural condition—just as the Esquimaux or the Hottentot accept with equanimity the climatic conditions of their own lands. The Canadian farmer reaps the advantages which a farm life affords to the full. His expenses are practically *nil*. His property is his own, and a year must indeed be unfortunate if it does not leave him sufficient to provide for his household requirements. Under ordinary conditions, his land, if it has been well managed, regularly increases in value, and his old age finds him with a property which he is in a position to sell, or to farm still with hired assistance. The members of his own family, if determined on an agricultural career, are started much easier than he was started himself. They probably assist in forming a colony of which he is the centre, taking one-fourth, one-half, or whole sections in his immediate vicinity; building their own houses, and growing their own corn; and this may be arranged in such cases with the help of but very little capital.

Questions Put.

For some years we have been accustomed to read the reports which have been written by independent visitors to Canada, and by the delegates who have been from time to time selected by the High Commissioner. In many cases these reports have been pictures, more or less glowing, which have stimulated an inquiring mind. They do not, and probably could not, answer all the queries which an interested writer could put. It is, indeed, questionable whether anything in the form of writing could possibly convey what a reader, with a mind directed to the subject, actually wishes to know. The same remarks apply to the description of a farm at home. As we are personally aware, letter after letter of description is forwarded by the agent, but they always leave something untold or untellable, with the result that a journey of inspection is made, and almost every answer is obtained. The inquirer with regard to the farm lands of the Canadian West, asks: —

What is the soil like?

Is the best land all occupied?

What are the actual and possible yields of grain and other crops, as distinct from the reported yields?

Is the country suitable for mixed farming—*i.e.*, for stock and dairy products as well as grain-growing?

What is the climate like?

Are the comforts and conveniences of life obtainable, and within easy reach?

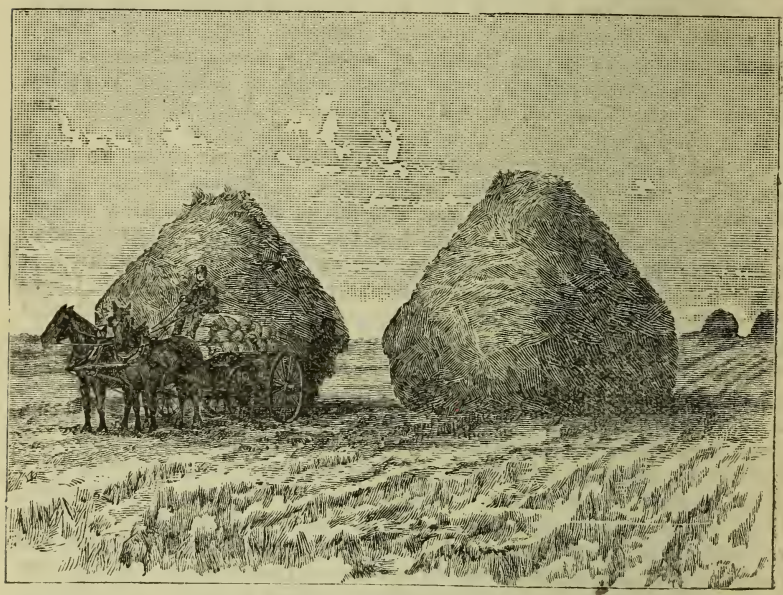
Are the general conditions such as would conduce to contentment and happiness?

Land Unoccupied.

Let me deal with these points so far as I am able from observations which were made in different parts of the West of Canada, and from statements expressed by the farmers and other settlers whose experience justifies them in giving a deliberate opinion. Although the physical character of the country is much less varied than in England, where hills and valleys afford a greater range of variation, the quality of the soil, as well as its adaptibility for farming, differs to a considerable extent. There are enormous areas which are less suitable than others from scarcity of water. It is possible that in time this difficulty will be met, but just now a settler is wise to avoid troubles which he might encounter unsuccessfully, so long as land can be obtained where such difficulties do not exist. I was informed by Mr. Johnson, the Dominion Statistician, that since 1890 over a million acres of land have been brought under cultivation in Manitoba and the North-West, and that a prodigious area in the North of the Dominion hitherto believed to be useless for agricultural purposes is now found to contain millions of acres which are adaptable for settlement. That settlement is pending in the direction of this region is shown by the success which has attended the efforts of those who have bought and are farming land at Prince Albert, Edmonton, Battleford, and long distances north of these three settlements. It is extremely easy to see how wonderfully rich and fertile much of the land through which one passes west of Winnipeg is; nor is it necessary in order to form an opinion upon this point to inspect and estimate the crops which are grown. In a large degree they bear no relation to the soil which produces them. The Red River valley is composed of a deep, rich, vegetable soil, which grows abundance of wheat throughout its limited area. Apparently the great bulk of this valley is occupied; but the great State of Dakota, in which the larger part of it is situated, is as poor as its favoured valley is rich. When we cross, however, from Dakota through the miserable bit of scrub, and over the insignificant stream which forms the boundary between Canada and the United States, we are at once in a position to recognise that, for some unexplained reason, the Canadians have not taken the same advantage of the land they possess which has been taken by the people on the other side. From the frontier right up to Winnipeg, the prairie on either side of the line of rail is practically unbroken; and from Winnipeg west, by the side of the railway, there are thousands, perhaps hundreds of thousands, of acres which are in the same primitive condition. I was informed that this was owing to the fact that the

land had been purchased by speculators (from the half-breeds to whom the lands were originally granted), who were holding over for better prices. Most of this land is not only admirably adapted for farming of the highest class, but is well watered, and contiguous to railway stations and elevators. It is, moreover, in direct communication with the big city of the West, Winnipeg, and within easy reach of such thriving towns as Brandon, Regina, and Calgary. Besides which, there are plenty of excellent settlements, well supplied with stores and every convenience, such as Elkhorn, Wolseley, Indian Head, Moose Jaw, and Moosomin. A great deal of the soil is of a deep black vegetable mould. In other parts it is a deep rich loam, sometimes approximating to clay, at others to sand, but usually capable of bearing heavy crops. Between Winnipeg and Regina these classes of soil are constantly found, and they extend in all directions, being sometimes bisected by thinner soils, or soils of a less fertile description, sometimes too dry for successful farming, at other times too wet. Naturally, the richest lands contiguous to towns and railway stations are first taken up; nor can it be expected that farms should be easily obtainable in these positions. Those who occupied the best lands in the early days were the pioneers, who are now reaping their reward; similarly, new settlers are taking up land in other parts of the provinces, and, as the population increases, they in their turn will have profited by obtaining remunerative results. It appears to me that, directly a few settlers set up their camp in a suitable district, they are followed by storekeepers, hotel-keepers, livery stable keepers, post offices, and the rest; and this system of the aggregation of people, and the building of towns in the wilderness, will probably continue until the whole earth is settled by man. If the new settler is determined to farm in a district which has been occupied, he must pay a relative price for his land, or wait his chance; and his best plan is to "homestead" as near to the district he has chosen as possible, and to seize the first opportunity which is afforded. A young Englishman hailing from my own town took up a section a few years ago, and at a considerable distance from a town or station. He accustomed himself to the life of the Manitoban farmer, and paid his way, keeping his eyes open to the chances which occasionally occur. He was in due course rewarded. An excellent farm, in a thriving and important district, near the railway, came into the market; the occupier, as I understand, having failed to complete the conditions upon which he took it up. Such chances constantly occur, and the very best land is sometimes obtainable for a mere song, but at all times good farms can be purchased, if the buyer is willing to pay market price, which is simply a fair sum in payment for value which competition has enhanced. With regard to the soil, then, we may conclude that it is better than the soil of England—although, of course, it cannot always remain so—and that there are probably millions of acres of land of very high quality still unoccupied; but that, as in other countries, such land is practically all occupied in the vicinity of centres of population, and of railway stations. The new-comer must be prepared to go further afield, and this he will only be able to do by following the example of those who have preceded him.

Yield of Grain. Now with regard to the actual and possible yield of grain and other crops. Hitherto the Canadian West has been recognised as a great wheat-growing country. It is more: it will grow all the cereals we produce in Great Britain, as



WHEAT STACKS, MANITOBA.

well as cattle, sheep, pigs, and many important field crops, such as potatoes, roots, and cabbages, which we grow at home. I was shown from undeniable evidence—that of my own eyes—that considerable crops of grain can be grown; but a short experience suggests that, if the future of the Western farmer is to prove successful, his system must be one of mixed farming, and not one confining him to grain alone. To grow grain in succession means early impoverishment of the soil. It also means that every year a certain proportion of the farm, being left fallow, will be unproductive. This is neither necessary nor profitable. If land needs a rest in order that it may replenish its store of grain-producing food by such means as nature provides, that rest need not be quiescent. It may be active with much greater advantage. Under our four-course system in England, and upon soils inferior to those of Manitoba, farmers have been able to grow excellent crops of grain of all kinds; but they recognised, even when science had not provided the reason why, that the clovers and other leguminous crops which succeed grain do not rely upon exactly the same constituents of the soil for food, and that they were able to grow abundantly even in a soil impoverished for grain-growing. We now know that the dominant constituents of plant food are nitrogen for cereals, potash for the leguminosæ, and phos-

phoric acid for plants of the turnip order. Bearing this fact in mind, the Canadian farmer (and he is working upon this system in the older provinces) would be able to crop every acre every year, and to produce foods for stock production which will pay him as well or better than the cereals he grows for sale. I was shown numbers of farms upon which the wheat, barley, and oat averages did not exceed—indeed, they sometimes did not equal—the figures which are given as the actual annual yield. Nevertheless, on contiguous farms the crops were double; but the reason was not far to seek. It was not alone the greater industry, but the greater intelligence which the farmer brought to bear upon the subject. I was shown farm after farm between Brandon and Indian Head upon which the wheat exceeded 30 bushels, and sometimes 40 bushels to the acre. In several cases both barley and oats also yielded highly productive crops; but I have still more direct evidence, based upon the work carried on at the two experimental farms of Manitoba and Assiniboia, which I was enabled to inspect, staying a couple of days at the latter, and taking actual photographs of the leading cereals, which were as remarkable as anything I have seen at home, or in any European country. Among the many plots and fields of wheat on this farm in 1892, there was nothing less than 24 bushels per acre in the test of varieties, the majority ranging from 30 bushels to 37 bushels. In the tests of stubble *versus* fallow, 37½ bushels were reached; while in the test of hybrids, the yields varied from 32 bushels to 35 bushels; in the tests of different quantities of seed with Red Fyfe wheat, the yields reached from 37 bushels to 40 bushels; and in testing the depths of seed, 2 in. gave 41 bushels. In 1893, the Red Fyfe variety yielded 35 bushels over 30 acres, 37½ bushels on fallow, 29½ bushels when drilled on unploughed stubble, 31½ bushels after spring ploughing, and 22 bushels after autumn ploughing. In the 1892 barley tests of different varieties, the yield varied from 36 to 57 bushels; 55 bushels was reached by pressing, as compared with drilling and broadcasting; while in 1893 the best field lot gave 57¾ bushels. In the 1892 tests of varieties of oats, the yields per acre ranged from 50 to 82 bushels. In 16 cases, out of 40 varieties, over 70 bushels were obtained. In many instances the oats weighed from 40 to 42 lbs. the bushel; doing better in this respect than either barley or wheat. In the field lots, 78 bushels were grown: while in testing the drilled against the pressed and broadcasted seed, 100 bushels were produced. In 1893, a 15-acre field gave 77 bushels; another field, 78 bushels; a third, 66 bushels. These 1893 crops I very carefully examined. In testing at different depths in sowing, 3 in. gave 87 bushels to the acre; while in sowing different quantities of seed, 97 bushels were harvested. In testing the influence of fertilisers, phosphates gave 85 bushels; while in testing two varieties on six different dates, one reached 88 bushels when sown at the end of April, and 87 and 86 bushels respectively when sown in the first and second weeks of May. These figures are remarkable; but the conditions under which they were obtained are such that it appears to me to be possible for any farmer occupying similar soil (there is plenty of it) to do likewise, if he cares to take the trouble. The fact is that the

farm at Indian Head, where these crops are grown, is thoroughly cultivated, and is kept as clean as a garden: and yet some of the handsome crops which I saw growing had actually been drilled upon the unploughed stubble of the previous year. At the Brandon farm, which is maintained with equal skill, and which has given quite splendid results, the highest yield in the test of 39 varieties of wheat was 36 bushels, as against 40 bushels in the previous year; but this must not be confounded with the much superior results of the 1893 crops, which were very nearly as heavy as those at Indian Head. In the test of 45 varieties of oats grown in 1892, the highest yield was 91 bushels, as against 87 bushels in the previous year; and no less than 16 varieties exceeded 70 bushels to the acre, while, with two exceptions, every variety yielded over 50 bushels; so that it is not in this case the variety grown, so much as the soil and the climate, which enables the farmer to reap such excellent crops. In 1891, of 25 varieties, the lowest yield was 58 bushels; while in the same year the test barleys varied between 31 bushels and 57 bushels to the acre, all but 12 being over 40 bushels. I was so amazed at the astonishing crops grown at the Indian Head farm, that I have obtained from the superintendent details of the actual yield since threshing—for which he has my best thanks. I am aware that upon a Government farm, where the cost of production is not always a consideration, as it is upon the farm of a settler, greater things can be accomplished; but in this case it is not a matter of manure, but of labour, skill, and common sense. The experimental farms exist for the very purpose of showing the settlers how to achieve similar results. They are always open for inspection, and every assistance is gratuitously given, together with seed, if that be necessary, so that the farmer can follow in exactly the same line, and, so far as time and labour permit him, achieve, if not the same, very similar results. In driving over the prairie, however, I too often noticed that the land had been, and was still being, prepared for cropping while in a foul and imperfect condition. Heavy crops cannot be obtained if cereals are grown among weeds, and so long as farmers are content to till the soil on a slovenly system, they will have to put up with inferior crops; and what is still worse, they will find that, instead of the value of their acres increasing year by year, it will be decreasing, because they are being rendered unfit for sale.

Mixed Farming Essential.

The next question which arises is, whether the country is suitable for mixed farming, and the production of dairy goods. In replying to this, two other questions arise—whether the stock of the farm can withstand the severity of the climate, and whether the crops usually produced for the purpose of feeding stock on a mixed farming system will grow with sufficient freedom. These two questions are answered by existing facts. In all parts of the West of Canada cattle are found, and at the exhibitions which I attended at Winnipeg and Brandon numerous specimens of almost all our English beef breeds were exhibited, of very excellent quality. Dairying already forms a part of the agricultural system of the West, and the produce, if not as good as that of England, is at

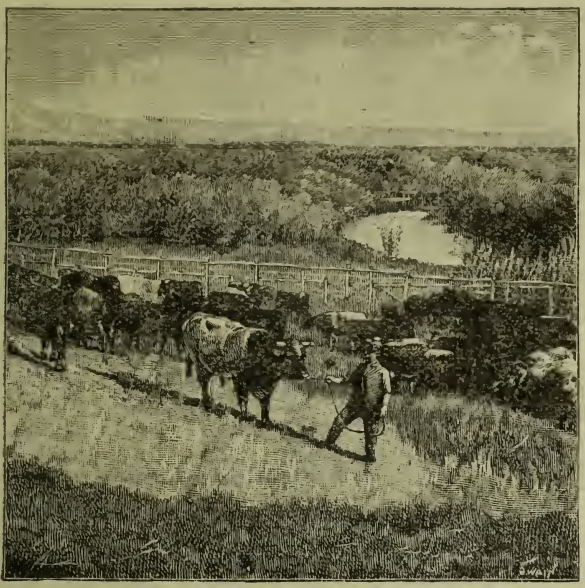
least as good as that of the United States, where the dairy industry has assumed stupendous proportions. The experimental work at the

A FARM-HOUSE, SOUTHERN MANITOBA.

Brandon and Indian Head farms has shown that crops adapted to the feeding of cattle can be produced with ease, if not in such large quantities per acre as in the milder climate of Great Britain. The Western farmer has the advantage of a large area of natural prairie grass upon which his stock can graze. He has abundance of straw, which will serve as food and litter, and protection against the severity of the winter season. Through the medium of stock he can consume any frosted grain, and his oats and barley, which, up to the present, he is not able to ship with any appreciable advantage. He can grow rape and roots, potatoes and cabbage, improving the soil by varying the system of cropping, destroying weeds, and simultaneously feeding his stock; and it is possible that for many years there will be no necessity for the introduction of artificial manures, or the feeding stuffs commonly used at home. The soil is to a large extent suitable to cattle and sheep—neither too heavy nor too light—and the disadvantages which may occasionally arise from the biting winds and an almost tropical sun may be obviated by the introduction of quick-growing trees, and more considerable shedding or housing. Fortunately, Professor Saunders, the director of the five Government Experimental Farms, and those who assist him have already made a considerable study of those timber trees likely to suit the Western prairie, and at a small expense plantations can be made which will in a very few years indeed prove of enormous advantage to the settler who goes in for stock-raising. As regards the production of milk, butter, and cheese, the Western settler is placed in a position of great advantage. If he is not actually near a market, measuring distance by time and space, he is sufficiently near for his purpose, measuring it by the cost of carriage. In a word, his products can be conveyed to the largest centres of population at so low a rate per pound that in this respect he occupies as advantageous a position as the

producers in most of our English counties. This, however, is perhaps not altogether the way to look at the question. New towns are being built up around him. An established highway exists between Winnipeg and Japan, China, Australia, and the East. He has thus the choice of the Eastern and Western markets, and he can produce at as low a rate as any dairy farmer in the world. At the present time it is within the capacity of any skilled maker to take a leading position as a cheese or butter producer, for the products of the province of Manitoba, judging from a careful inspection of the exhibits at Winnipeg, are not all of a high character. A Dairy Farmers' Association already exists. This is in touch with the Government and the Dairy Commissioner; and it is therefore within the power of the Manitoban dairymen, thus banded together, to produce a uniform article, and to create a market for goods of a distinct and recognised character. Senator Perley, of Wolseley, whom I had the advantage of meeting, and who has himself a thriving dairy factory, is one of those energetic leaders of men with great faith in the future of their country, who would probably be of great service in this cause; but I cannot counsel intending dairymen settlers too seriously to devote at least a year to the most thorough practical experience in the very best dairies and factories within their reach, before going out to the West. They should know exactly what equipment they need before making a start. The control of temperature is absolutely within their reach; and yet this is not the case in England. The manufacture of cheese of the highest class during the hot months of summer is much more to be recommended than the manufacture of butter, which may monopolise the whole of the remaining months of the year, during most of which it will keep perfectly sweet with little or no salt at all. In this way the Canadian consumer may be provided with mild, perfectly flavoured butters similar to those of Europe during the greater part of the year. The proverbially delicate Jersey cow, although in my experience her constitution is as tough as most of our breeds, was occasionally seen grazing in Manitoba as happily as if she were in the little island of Jersey. In a word, there is no doubt that all our chief dairy breeds will find the climate and the food provided as suitable as in the Old Country. It will, however, be found advantageous to use those dairy cattle which, in case of accident or necessity, can be converted into beef; and it follows that if the dairy industry is to extend, and mixed farming is to become part of the system of the country, there must be some provision for the utilisation of cattle intended as food for the people. It will not be sufficient to collect and ship to an English or Scotch port store cattle for finishing off in this country. One of the most experienced of Western butchers and shippers, having just returned from England, gave me full particulars of the cost of shipment, and of the placing of Canadian beef upon the British market. He concluded that the business was not a profitable one, unless the cattle purchased in Alberta and the Far West could be obtained at a reasonable price. The existing prices of meat sold by British butchers are sufficiently high to be suggestive of the fact that neither the British farmer nor the Colonial farmer receives

anything like his just share of the profits. In due course this matter will need overhauling, and it will be the fault of the Canadian if he does not control the marketing of his own produce, and obtain a price which will enable him to profit by the transaction.



CATTLE IN THE QU'APPELLE VALLEY.

Climate.

With regard to the climate, numerous observations have been made by the Government authorities, from whose reports I have obtained the following data. The mean summer temperatures are from observations taken between July and September, and the mean winter temperatures between January and March.

Place.	Mean Temperature. Summer.	Winter.
Brandon	58·1	— 1·8
Winnipeg	60·3	1·0
Rapid City	62·2	2·7
Minnedosa...	55·3	— 2·0
Russell	55·8	— 3·8
Portage-la-Prairie	61·8	— 2·6
Regina	59·2	— 2·4
Medicine Hat	62·9	13·2
Calgary	55·6	12·2
Battleford	60·0	12·5
Edmonton...	55·2	11·3

It will be noticed that Battleford and Edmonton, like Prince Albert (another popular settlement), are considerably north of both Manitoba and Assiniboia, the former settlement being in Saskatchewan. As a matter

of fact, whereas the latitude of Winnipeg is 49·53, and Minnedosa (a favourite settlement) 50·10, Battleford is 52·44, and Edmonton 53·32; while Calgary, also considerably milder than some of the popular settlements mentioned, is 51·2. In 1892 the mean temperature of Winnipeg and Calgary ranged as follows during the several months:—

	Jan.	Feb.	March.	April.	May.	June
Winnipeg	— 8·4	1·5	18·0	32·9	45·5	60·4
Calgary	14 5	16·3	29·7	34·1	43·9	55·8
	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Winnipeg	67·2	63·4	53 0	41·1	14·4	— 1·9
Calgary	59·9	57·8	50·4	40·0	19·0	12·0

The quantity of rain which has fallen between 1872 and 1888 in Manitoba varied from 9·01 inches in 1886 to 22·15 inches in 1872. In three distinct years it fell below 12 inches, and in three other years it exceeded 20 inches. This deficiency, however, has been made up by snow, which varied between 20·9 inches in 1877 and 81·4 inches in 1872. In 1892 the total precipitation in Winnipeg and Calgary was as follows:—

	Jan.	Feb.	March.	April.	May.	June.
Winnipeg	0·41	0·61	1·60	1·91	1·38	1·40
Calgary	0·03	0·03	0·07	0·60	0·06	1 07
	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Winnipeg	3·57	3·73	0·86	0·84	2·26	0·10
Calgary	2·40	1·10	0·50	0·66	1·30	0·09

Is the Winter Endurable?

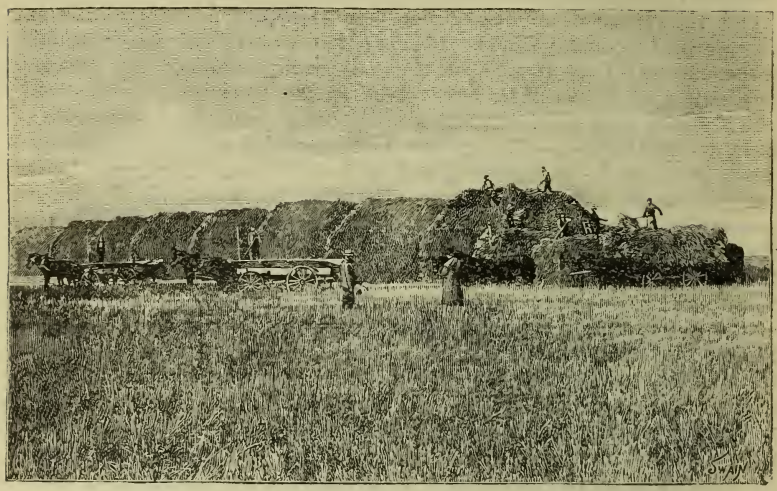
During the summer months the heat is occasionally intense, but I do not believe that it is more severe than it was in England in July and August of 1893. It is much more endurable than the heat of the United States, and can scarcely be termed tropical, any more than the heat of our own country. The sky is cloudless, the air dry and pure, and, so far as I was able to see and to learn, it is seldom sufficient to check the outdoor work of the farm. I should say that the mosquito is more troublesome than the sun, especially during the evening, when its attacks are as vicious as they are annoying; but this the acclimatised settler regards with greater equanimity than the visitor, who is a much easier prey to the detestable insect. With regard to the winter temperature, I am induced to believe, from the statements of numerous English friends and Canadian acquaintances in Manitoba and the Territories, who have no personal interest in exaggerating, that the dryness of the climate, and the general absence of wind, are really factors in ameliorating the severity of the cold, which on some occasions we feel so keenly in this country. Many Canadians declared that they pay little regard to it. In a word, it is the only winter condition they have ever known. Friends from this side have felt the cold keenly during their first winter, but have easily become accustomed to it; and some have gone so far as to say that they absolutely enjoy the winter season, while others declare that they feel the effects of the cold much less than in England, the crispness of the atmosphere having an exhilarating and healthy influence. On the other hand, I came across two or three

people, neither of whom were farmers, who by no means appreciated the winter season. It is probable that the fact was owing in a great measure to their occupation, which was sedentary, and to the difficulty—which the farmer does not experience in the same degree—of keeping themselves thoroughly warm. I believe that some of the poorer farmers, whose means do not permit of their obtaining some of the absolute necessaries of winter life, have great reason to complain of the cold; but if a man lives in a wooden shanty, badly built, and incapable of keeping out the cold,—if, moreover, he is provided with an insignificant stove, in which he burns wood, and with insufficient clothing,—he can scarcely expect to feel that degree of comfort for which the Esquimaux provide by a more careful if less elaborate arrangement. Summing up the opinions expressed for and against the winter climate, I am bound to believe what the thermometer alone indicates—that it is a quantity to be reckoned with, but that, if as careful provision is made by the settler as is made by the inhabitants of Eastern Canada and the United States, who thoroughly warm their houses, and provide special clothing for a special season, they need be under no apprehension. One of my acquaintances spoke of his 20-mile drives across the prairie in a sleigh to skating parties with absolute delight, although an occasional trouble is experienced in finding the way home. We in England have plenty of experience of the difficulties of keeping warm during long drives in our own winter season; but I was unable to gather that there was any appreciable difference in the two cases, for in one case provision is made, whereas in the other there is very little.

The Comforts of Life.

It is practically unnecessary to discuss the question whether the comforts of life are easily obtainable or not. The Canadian Pacific Railway, with daily trains from West to East, and from East to West, carries to every settlement along its route whatever the people require; and if the storekeepers at the smaller settlements do not—as I found to be the case—keep such commodities as we Easterns look upon as necessaries, it is only because their customers regard them as luxuries which they can very well do without. Necessaries are comparative. Inspecting the leading shops of Montreal and Toronto, I could not fail to notice a difference as compared with the shops of London, Paris, and Berlin. Similarly, the shops of Winnipeg were less perfectly equipped than those of the two leading Canadian cities, and yet almost everything that is necessary is obtainable. The shops of Brandon, small as it is, were more numerous and generally superior to those in towns of similar size in England; and it is almost impossible to conceive that Brandon is so absolutely new. Regina and Calgary are sufficiently well equipped with stores for the supply of the North-Western Territories. Schools are common, and if occasionally they are a little more distant from home than they might be, the difficulty is not confined to Canada: farmers' children often have as far to go in England. A great deal is being done in the erection of churches, and in the provision of services on Sundays; yet buildings erected for the worship of God are not absolutely essential to the success of the physical or spiritual life. Medical men are to be found wherever there are settlements, and, if

I may judge by the cost of advice and medicine in my own case, their charges are extremely moderate.



CAMERON'S FARM, QU'APPELLE.

The Men to Succeed.

With regard to the general conditions of farm life in the West, and whether they are conducive to happiness and contentment, I am bound to believe that it depends entirely upon the individual, his aims and aspirations, his energy, and capacity for work. No man should emigrate for the purpose of farming in Canada whose heart is merely bent upon "making his fortune," as it is termed. The country affords the means of obtaining a comfortable livelihood, of acquiring property upon easier terms than at home, and of practically achieving a competency. The labourer who fails to obtain more than 16s. a week in England, could in the West, with sufficient means to enable him to carry his work through with thoroughness, obtain a quarter-section, or 160 acres of land, which would soon be absolutely his own, affording him in due course the opportunity and means of placing his own sons in similar or still better positions. The struggling young farmer scarcely able to make both ends meet, in consequence of the insignificant farm returns in England, and the comparatively high rates and taxes, could with the same amount of capital probably take and well manage a whole section, or 640 acres, which in the course of time might be worth a considerable sum of money; while it would at once afford him the means of achieving a respectable competency. Western Canada is a country fitted only for men who intend to live by work. It is no place for men without thew and sinew, or for those who have no experience of farm life; but men who love the soil, who are healthy and strong, and whose object is to pass their days in freedom, and in the enjoyment of an agricultural life, with its many pleasures, and its occasional troubles

and vexations, will find many parts of the West well adapted for their purpose. I am acquainted with several young men who have gone out to work upon the farms of prosperous settlers. Their life is no easier than that of the English agricultural labourer. Preferring a farmer's career, they had no means of entering upon it at home for want of capital. In Canada, having acquired a knowledge of the system followed, and of the best means of obtaining land likely to suit them, they will in due course take up farms, and equip them out of their savings. These lads will soon become thorough-going Canadians, but they are just the fellows who would have succeeded on farms at home, had they been possessed of sufficient means. Such is the curious state of affairs that it costs infinitely less to buy and equip a farm in Canada, than to take a farm in England. Still, I would not recommend well-educated and energetic young men to adopt the life I have described, unless they are entirely unable to find employment at home.

EXPERIMENTAL FARM, OTTAWA.

The Experimental Farm at Ottawa.

With the object of showing exactly what is done by the Government for the benefit of the farmer, I visited three of the five experimental farms which are now in full working order in the Dominion—those of Ottawa, which is the chief, Brandon, and Indian Head. The Ottawa farm is between one and two miles from the city. Formerly a swamp, it is now a fertile and handsome domain, growing, at the time of my visit, crops of all descriptions under plans which have been

well thought out by the director, Professor Saunders. In a new country it is essential to thoroughly understand exactly what varieties of each kind of plant are most suitable for cultivation. In the West the frost occasionally overcomes the wheat crop. It is therefore necessary to select, not only the hardiest and most prolific varieties of wheat, but those which ripen earliest, and which are fit to harvest before the autumn frosts set in. Similar remarks apply to crops of many other kinds, and hundreds of experiments are consequently made with cereals, pulse, grasses, fruits, vegetables, forest trees, and plants of other necessary kinds, with the object of providing the farmer with the best seed or the best variety. The farm is some 500 acres in extent, and, among others, bore considerable crops of maize and sunflowers, intended for conversion into silage for feeding the cows upon the farm during the winter. Maize grows well in the Dominion, but it is neither rich enough in oil nor albuminoids to provide an economical ration alone. Professor Robertson, the Agriculturist and Dairy Commissioner, suggested the introduction of the sunflower, which is rich in both constituents. If success follows the suggestion, which there is reason to believe will be the case, a most valuable addition to the profits of the farm will be placed within the reach of the milk-producer. The experimental crops included wheat, oats, barley, beans, peas, maize, mangels, carrots, grasses of many kinds, 500 varieties of fruits, with tomatoes, tobacco, cabbage, 250 varieties of potatoes, a variety of forage crops, and other plants too numerous to detail in a paper of this nature. In 1892 the officials of the farm distributed among the farmers of the Dominion 16,900 bags of seed grain, 5,000 bundles of seedling forest trees, and 4,000 bags of tree seed, while 1,370 samples of grain were received from farmers for report. Further, the reports issued by the director are sent to 25,000 farmers, who have by request been placed on the list. Perhaps the most important of the experiments conducted is that in testing timber trees upon a very extensive plan. West of Winnipeg, where there are practically no trees at all, and and where the climate is most severe, it is essential that every effort should be made to ascertain which variety of the thousands in existence is best adapted by its rapid growth and hardy nature to the requirements of the farmer. With this object in view, Professor Saunders is growing a belt of trees around the farm 165 ft. wide. I was shown every variety, and was enabled to appreciate the extensive nature of the work which they represented. The trees are grown in several different forms. In some cases they are grown 5 ft. apart, and in others 10 ft. apart. Some, too, are grown 5 ft. by 10 ft., and there are clumps of trees of one variety and of mixed varieties. So far, mixed trees grown 5 ft. apart are succeeding the best. I have elsewhere described the names of the varieties, and the appearance they presented. I will only add that the experiment is one of the most valuable with which I am acquainted, and, taking into consideration the fact that the farm is essentially new, the work is carried out with greater thoroughness than I have seen at any of the many Government farms I have had occasion to inspect in several of our European countries. It does not, however, stop at the growth of plants: cattle,

swine, poultry, and dairying are handled with equal skill and thoroughness; and it is impossible to visit the farm at Ottawa, or at either of the other stations, without recognising that the Government is doing its very best to promote the prosperity of those who settle in the Dominion, and that it is especially fortunate in obtaining the co-operation of such competent and earnest officials.

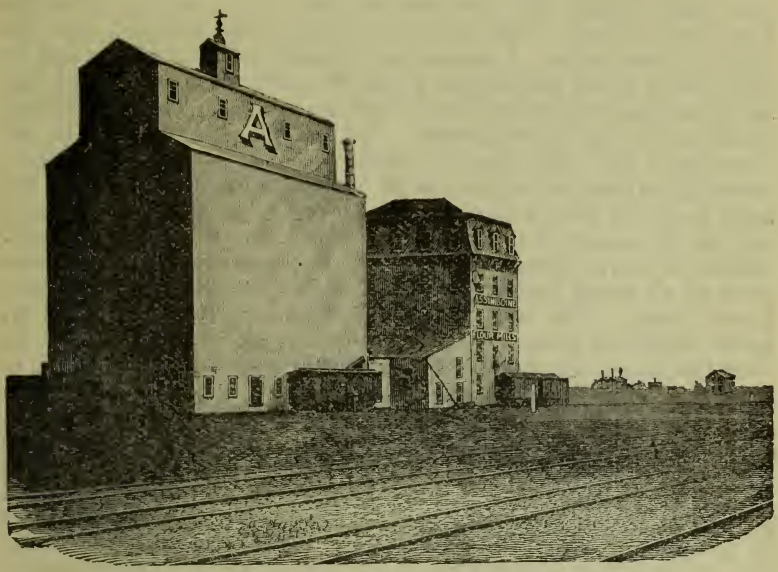
The Manitoba Experimental Farm.

This farm, which consists of 625 acres of land of varied soil, extends from the banks of the river Assiniboine to the brow of the "hills," as they are termed—though it requires a powerful imagination to estimate them as such—and faces the thriving town of Brandon. Although there is plenty of land equally as good as the best of that of which the farm is composed, its position—facing the south—and well watered as it is, is perhaps better than the majority of farms in the neighbourhood, or even in the provinces. Here work of a similar character to that conducted at Ottawa is carried out, under the direction of Mr. Bedford, a Sussex man of considerable experience as a farmer in the West, who was on this account selected for the important post he holds. I do not believe that Mr. Bedford owes anything beyond the farm itself and its appliances to the territorial Government which he serves so well, for the splendid results he yearly obtains. If, therefore, one farmer can do so well for the Government, why not another farmer for himself? Making every allowance for the condition of such an occupation, I think every competent man, with good soil and sufficient capital to equip his farm, has as much right to expect the same results as Mr. Bedford himself. The crops included all the cereals, grasses, roots, potatoes, fruits, and trees likely to assist or interest the farmers of the provinces, together with a capital lot of stock, including Galloways, Shorthorns, Ayrshires, and Dutch, stabled in an excellent barn, well equipped with stalls and every necessary convenience. The collections of trees grown in the form of hedges and wind-breaks are most interesting, although less instructive. At Ottawa some 20 hedges of considerable length were growing side by side, each composed of different varieties of shrub or tree. Mr. Bedford informed me that the land near him was worth £4 an acre, but that a few miles away it was not so valuable, realising from £1 12s. to £3 an acre. I have, up to the date of writing these remarks, received no details of the crops which I saw growing; but in 1892 45 varieties of oats were tested on clay loam soil, after summer fallow, 9 pecks of seed having been sown with the drill, two varieties only yielding less than 50 bushels to the acre; the remainder varying from 51 to 91 bushels, 16 varieties growing more than 70 bushels, ripening in from 90 to 100 days. In 1891, a similar test with a small number of varieties produced crops varying from 58 bushels to 87 bushels. In the same year—1892—of 18 varieties of barley sown with the drill on summer-fallowed land at the rate of 2 bushels to the acre, two varieties only produced less than 40 bushels, the highest reaching 57; but Mr. Bedford informed me that he had reached 75 bushels, the test crops affording no exact idea of the actual yield upon the farm. In testing varieties of grain for the benefit of the farmers, there were no less

than 169 plots of wheat, 102 of oats, and 86 of barley, peas, &c., among others. Some tests were made upon black loam, others upon clay loam, and others, again, upon upland prairie; the heavy land giving the best results, while the same varieties did not always reach the top. Other tests were made with cross-bred wheats, with Red Fyfe wheat grown by the aid of farm-yard manure, both fresh and rotted, the manure failing to increase the yield; and with the aid of superphosphate of lime and salt, both of which slightly increased the yield. There were also tests on spring- and autumn-ploughed land *versus* summer fallow—the fallow giving 38 bushels, against 28 bushels on spring-ploughed land, and 16 bushels on autumn-ploughed land. Other tests were made to ascertain whether the system of sowing affected the yield. The "Superior" drill, perhaps the best machine in the market, was pitted against the press drill, the common drill, and the broadcasting machine. In every case the yield exceeded 30 bushels; the first-named drill achieving the best results. We cannot too strongly endorse Mr. Bedford's recommendation that in growing barley the land selected should be thoroughly clean, and the seed sown and harrowed immediately after the plough in spring. He recommends the press drill in preference to broadcasting, and the use of stiff-strawed, pure, clean, plump seed; and he advises the farmer not to neglect his barley for his wheat at harvest time. Many similar tests were made with buckwheat, which yielded from 31 to 51 bushels per acre; with mixtures of cereals and vetches or peas for fodder, as much as 6 tons per acre being reached in some cases; with the best native grasses and maize, many varieties of which exceeded 20 tons per acre, while three exceeded 26 tons per acre; with millets, turnips, mangels, and potatoes. In the turnip experiments, the seed being sown in drills on the flat in May and June, the crops varied from 14½ tons to 30½ tons. Mangels sown in May and June, in flat drills, yielded from 12 to 43 tons after the May sowing, and 23 to 36 tons after June sowing. Carrots sown in May and June varied from 7½ tons to 13½ tons per acre; while potatoes, a large number of varieties having been planted, varied from 117 to 443 bushels per acre. Some idea of the comparative yields may be shown if we mention that Imperator, so well known in England, gave 297 bushels, Magnum Bonum 256 bushels, Bruce 220 bushels, Myatt's Ash Leaf 129 bushels, and Early Rose 332 bushels. All these British varieties were beaten out and out by others presumably more suited to the country. Although bush fruits thrive splendidly in the province, and produce as fine fruit as any to be seen in England, tree fruit is not so far a success, and for this reason many varieties are being tested at the Brandon and other farms. In the course of the year Mr. Bedford is visited by thousands of farmers from all parts of the country, many crossing from the United States, and there can be no doubt that they gain a very large amount of valuable information, much of which they put in force upon their return to their own farms.

While in the Brandon district, I heard a complaint that a person who had been employed as a sheriff's officer, and who had in that capacity seized the crops and implements of farmers who had failed, had

also been employed to show visitors and others the great capabilities of the country for successful settlement. On the other hand, I was told



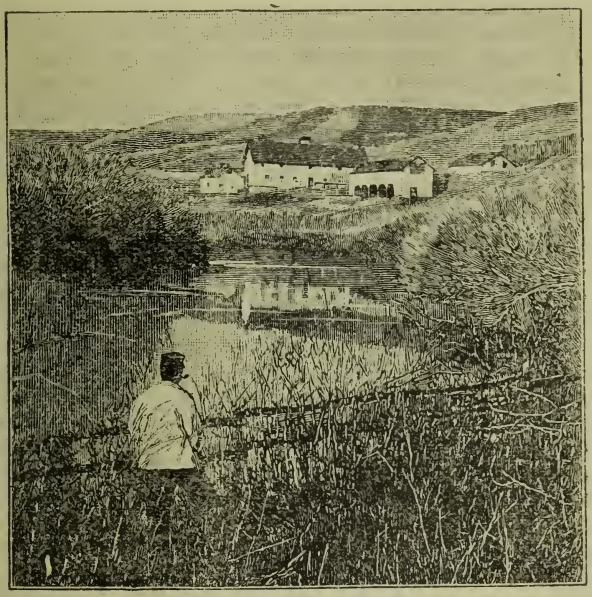
GRAIN ELEVATOR, BRANDON.

by an old settler that his fellow-Scotchmen, who had been compelled to put up with skim-milk in their own country, were now having cream with their porridge. This was his method of explaining the improvements in their material position. The fair at Brandon was excellently arranged, and was a replica of Winnipeg on a smaller scale. I was introduced to a number of thriving farmers residing in the Brandon Hills district, at Portage-la-Prairie, and on Carberry Plain, in each of which districts the land is excellent, and the farms prosperous. I subsequently visited several farms, among which I may select that of Mr. Henry Nicholl, of Fairview, who upon my arrival was good enough to horse his own buggy and to drive me through his own crops, regardless of the damage, and around several of the farms in the district, finishing up with the Sandison Farm, which has created so much chatter, as well on account of the excellent results which have been achieved upon it, as of the subsequent career of the remarkable man who owned it. The first piece of wheat through which we drove was after fallow, and was estimated—certainly not too highly—at 30 bushels. It had succeeded fallow, previous to which the land had grown three successive wheat crops, each of which had averaged 30 bushels per acre. The barley, which was sown late, was for summer fallow, and to be ploughed in. In some cases timothy was being cut for hay, and a large portion

for seed. Here a variety of couch grass—called "sweet grass" in the neighbourhood—was somewhat prevalent. Mr. Nicholl thinks that one-third of the acreage of the farm should be in fallow, or in some crop other than cereals. He owns another farm a mile away, and here he first made a start. This land was equally well managed, and was carrying good crops. I crossed one 40-acre field which was said to have carried a very fine crop of wheat last year—1892—and which was again carrying from 30 bushels to 40 bushels per acre. There was also an excellent piece of bearded wheat. Mr. Nicholl prefers spring to fall ploughing. His oats, some of which were late—too late, in fact—averaged between 40 bushels and 60 bushels to the acre. He had 100 acres in all, and these were of the Banner variety, which has succeeded so well on the experimental farms. He finds oats an almost sure crop, seldom, if ever, suffering from frost. I specially noticed one 14-acre piece of six-rowed barley grown from seed obtained from the experimental farm. This was very excellent indeed, but, unfortunately, barley realises no price, and for this reason it is sown least of all. In 1892 the grower could only obtain from 20 cents to 25 cents (10d. to 1s.) per bushel. It is quite clear that, this being the case, stock-feeding must follow. North of these farms was a wide strip of country which is completely settled 50 miles back. The houses and buildings are naturally very small, considering the absence of timber and roads; but, making allowances for this fact, and for the entire absence of trees, and even bushes, it looked prosperous and bright, the land being covered as far as the horizon with golden grain. A mile or two distant, Mr. Nicholl has a brother—William—and another relative—Mr. Nathaniel Reed—both of whom occupy useful farms, which are well managed, provided with good buildings and gardens, and many comforts which one would scarcely expect to find in a comparatively young country. Mr. Nicholl himself keeps two teams of horses at the farm upon which he resides which would do credit to the best farmers in this country. I concluded from my observations in his buildings that he is one of the species of genius who can tackle any difficulty which arises either with the stock or machinery—a very essential thing indeed, especially in seed time and harvest. He is one of those sturdy men, full of energy and perseverance, who are determined to succeed, and, with his newly married young wife, is living happily and contented in one of those visionary cottage homes, as it would be termed in England, which combine economy and comfort.

The Sandison Farm is of considerable extent, and the house very much larger and much more substantial than any I saw in the country. The stables for the horses were rude, but economical and useful, structures—frameworks of wood, covered with turf, and banked up to a great thickness with earth. The soil upon this farm is said to be as good as on any farm in the municipality, consisting of six townships—a township, I believe, consisting of an area six miles square, each square mile being a section of land of 640 acres. One section was fallow; the rest bore excellent crops, and had evidently been thoroughly well farmed. The house is a stone building, surrounded by good fences and newly planted trees; nevertheless, since it was abandoned weeds were

growing 3 ft. high. There was excellent water, good granaries, and cart-houses. In this township several farms were pointed out to me which have grown splendid crops in the past in the times when prices were better. Mr. Nicholl, who thoroughly believes in improving the present system, admits that he is himself in search of plants adapted for summer fallowing, such as he can plough in with success. He has tried rape; clovers are killed by the winter frosts; potatoes do not realise sufficiently high prices in the market; and roots are costly to hoe. I suggested mustard, which will surely grow wherever maize can be produced. He admitted that farmers could do well with pigs to consume their barley, and there is little doubt that thoroughly well-managed bacon factories would succeed if the farmers would take



HYDE FARM, QU'APPELLE.

to bacon-production, feeding their pigs upon barley and potatoes, which might be utilised in summer fallowing. I also suggested sheep, which might be folded, or run over a root crop such as might be grown upon fairly clean land without the necessity of hand hoeing; and these will undoubtedly be tried in this district. It struck me that had Mr. Nicholl and his relatives—for there are four families in the neighbourhood—built their houses close together, as is the case in some of the colonies occupied by Germans and Swedes, life would be more pleasant, and actual assistance might be rendered with much greater ease. This farmer, who left Scotland as a boy of eight years, insists that English and Scotch working farmers succeed much better than educated men, or labourers who are not trustworthy—better, in fact, than any of those

settlers who insist upon following the English system when they make a start. In his experience Ontario men achieved the best results.

We pass on to the settlement at Indian Head, which is near the great Bell and Brassey Farms. Here I spent a couple of days, upon one of which a deputation came from a large body of farmers in the United States, with the object of exploring the country and ascertaining whether suitable land could be obtained for a numerous settlement. Here is situated the experimental farm of the North-West Territories. The farm covers 680 acres, and is about 100 miles beyond the western boundary of Manitoba. The soil varies considerably in quality. In some cases it is heavy clay; in others it approaches a sandy loam, which blows in summer when the wind is high. There is plenty of water, the railway is near, and there are numerous thriving settlements. In no way so advantageously placed, however, as the other farms described, the director has, nevertheless, been able to produce crops which, to me, were of a marvellous description, and which are alone sufficient to suggest the great capacity of the district. There were crops of wheat, barley, and oats which were as fine as anything to be seen at home. The oat crops, however, were the most remarkable of all, exceeding 70 bushels per acre in a large number of instances. The straw was also remarkably fine, reaching to the shoulders of a tall man. I have, however, already referred to the yield of the respective crops. The various experiments with cereals, grasses, fodder crops, roots, clovers, flax, potatoes, beans, peas, cabbages, carrots, and various garden plants, fruit trees, forest trees, and cattle, swine, and poultry were similar to those to which reference has been made already. Sixty-five varieties of potatoes were tried, the yields varying, with one exception, between 240 and 532 bushels per acre. Swedes yielded from 365 to 852 bushels per acre. Maize did not do so well as at Brandon. Bush fruit is a great success, but fruit trees have so far not succeeded; and yet tomatoes ripen. The cattle included Shorthorns, Angus, and Dutch, and are of good quality. From this station, 17,700 seedling trees were distributed in 1892, in addition to a large number of fruit bushes and garden plants of various kinds. Ensilage is made, and succeeds in spite of the very low winter temperature. At this station the rainfall in 1892 amounted to 6·92 inches between April and September, June being by far the wettest month. Between May and September there were 1,346 hours of sunshine. The minimum temperatures were considerably below zero in each of the five winter months, November to March, on particular days; and, curiously, with one exception—a single day in December—it reached from 32 degrees to 59 degrees on different dates in the same month. There were frosty days in April, May, September, and October, but none in the summer months; while the highest temperatures reached were 96 degrees on the 6th of July, and 98 degrees on the 1st of August.

Western Settlements.

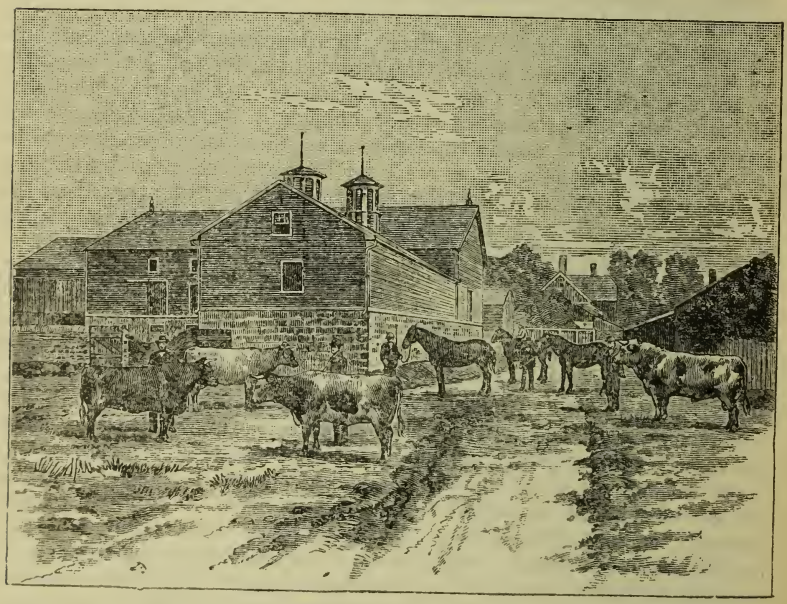
In this part of the Territory there is a most destructive weed, known as "tumbling" weed, which was shown me by Mr. Mackay. He remarked that on a single stalk half a million seeds have been found. It was very prevalent on the Bell Farm, but scarcely noticeable on the Brassey Farms, which

were excellently arranged, and were growing handsome crops, although I fear they have not yielded so well as they promised to do. I drove round each farm, and was much pleased with the manner in which they are cultivated, although there can be little doubt that the work would be more economically performed by working settlers than by the somewhat expensive system which is conducted. There are plenty of farms in this neighbourhood which in 1893 exceeded 40 bushels, and in some cases 45 bushels; almost every farmer having individual fields which exceeded 40 bushels per acre. Upon the Bell Farm the averages are quoted at from 30 bushels to 35 bushels, and in one field of 100 acres the crop has reached 45 bushels per acre. The best wheat land does not extend far west of this settlement. The farther west we go, the more adapted is the land to ranching; and the same remark applies to the popular settlements further north at Prince Albert, Edmonton, and Battleford. There is plenty of land in these parts of the Territories which will grow wheat, but the frost has to be reckoned with, and one settler remarked that with him there was always a certain amount of uncertainty, which is increased threefold in Prince Albert and other districts. In addition to this fact, the farmers have to contend with the greater distance from markets. As, however, the population increases, an outlet will be found on the Pacific Coast, and stock, for which this country is adapted, will be more generally produced. My belief is that the difficulty of cereal production is not important. Splendid crops could be grown for fodder, and in this way a large amount of stock could be kept throughout the year, as well for the production of butter and cheese as for meat. These settlements are but a day's journey from the main line at Regina and Calgary, and both are in direct communication with Winnipeg and the Pacific.

Guelph College Farm.

Before leaving the country I paid a brief—unfortunately, a too brief—visit to Guelph, where very excellent work is being performed in the growth of experimental crops, and in the instruction of the young farmers of the future. I was shown over the crops by Mr. Zavitz, B.Sc., who, I believe, has now succeeded Professor Shaw in the management of the farm. The crops were in process of being harvested; some were actually being threshed. In all there were several hundred plots, including 81 of oats, 87 of wheat, 78 of barley, 93 of maize, with large numbers of swedes, turnips, mangels, carrots, millet, beans, clover, grasses, rape, potatoes (163), and several other kinds. When it has been ascertained which varieties suit the soil best, the plots are increased in size, and their selection is continued over two or three acres every year. Selections are made of the best varieties of each kind of crop, and lists are sent to the farmers, from which they are entitled to choose. One hundred and eighty farmers, for example, grew six kinds of oats, and an average was taken of the results. Tests are made with crops grown by the aid of fertilisers, and in these experiments farmers in large numbers also assist. The soil is chiefly a clay loam. It is splendidly managed, and is a credit to the college, which is perhaps more perfectly equipped for agricultural instruction than any institution we have in this country.

Looking back upon a trip which was as exciting—nay, almost as fascinating—as it was instructive, I regret most of all that I could not see more. Time, as it is allocated to us mortals, is too short to permit of busy men thoroughly doing a big country. I should have liked to explore the land north and west of the latest settlements, as well as the fertile valleys of British Columbia. Young settlers have great opportunities for sport and adventure before them in the Rockies —a new range of Alps little known as yet—on the giant lakes, which are scarcely explored, and the great rivers and their tributaries, which are as wonderful as they are beneficial. A country so vast and so liberally endowed by Nature cannot fail to attract the hardier and more adventurous of her sons, and thus with time the Western farmers will increase and multiply, and they are destined to become the progenitors of a great nation of the world.



AN ONTARIO FARM.